REMARKS

Applicant respectfully requests reconsideration and allowance for the above-identified application. Claims 1, 2, 4, 6-13, 15-20, 22, and 23 remain pending, wherein claims 1, 4, 6, 13, 16, 17, 18, 20, and 22 have been amended.

Initially, the Office Action rejects claim 4 under 36 U.S.C. 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, the Office Action states that the limitation of "wherein the HTTP-based 'reply' includes at least one of the second messages there" has insufficient antecedent basis. Accordingly, Applicant has amended claim 4 in order to address the Examiner's concerns. As such, Applicant respectfully request withdrawal of this ground of rejection.

The Office Action rejects claims 1, 2, 4, 6-12, 20, 22, and 23 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,725,272 to Susai et al. ("*Susai*") in view of U.S. Patent No. 6,789,119 to Zhu et al. ("*Zhu*"). In addition, the Office Action rejects claims 13, and 15-19 as allegedly being unpatentable over U.S. Patent No. 6,584,321 to Coan et al. ("*Coan*") in view of *Zhu*. Applicant respectfully traverses these grounds of rejection.[1]

The present invention provides for an HTTP-based, reliable messaging protocol that enables bi-directional reliable massaging through a web proxy. In typical systems, the proxy facilitates communication between a client and server using HTTP protocol, which a request-reply protocol, thereby not allowing unsolicited messages to pass from the server to the client. As a result, current messaging protocols require that the client periodically, and with great frequency, transmit requests for messages through the web proxy to the web server (commonly referred to as a "polling" process). Unfortunately, this pooling technique greatly increases network traffic, especially in situations where the server has no messages to be sent to the client. Further, during periods of heavy activity, the server may generate a significant number of messages. These messages must be queued until the next opportunity to transmit to the client in response to the next poll request. As may well be imagined, this may significantly delay the

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[1] Although the prior art status of the cited art is not being challenged at this time, Applicant reserves the right to do so in the future. Accordingly, any amendment or arguments made herein should not be construed as acquiescing to any prior art status or asserted teachings of the cited art.

processing in both the client and the server processor, and may result in time-critical messages not being sent on time.

The present invention solves such problem with polling and other systems by enabling the sending of bi-directional unsolicited messages through a web proxy server. The present invention uses two client-initiated virtual channels to enable this bi-directional messaging. One channel is for client-to-server communication and server message delivery acknowledgments. The other virtual channel is for server-to-client communication and client message delivery acknowledgements. Unlike polling systems that only allow the server to send messages at the discrete times of the polling messages, under the example protocol of the instant invention the HTTP "request" is parked at the server to enable the server to transmit messages at any point in time that the messages are generated. This significantly increases the efficiency of the message transfer since the messages must no longer be queued at the server to await a polling request before they may be delivered to the client. Likewise, the client-generated HTTP message acknowledgement is embodied in a HTTP "request" that serves to acknowledge that the previous message was successfully delivered, as well as serves as a parked "request." This newly parked request once again allows the server to transmit messages to the client as soon as they are generated within the server, thereby maintaining the persistent HTTP-based connection between the client and server.

In another embodiment of the present invention, client generated requests parked at a server may include a request that the server send a reply after a period of time. This will ensure that the client's proxy server will not time out and close the connection due to inactivity on the channel. When the client receives the timed reply, the client may again send a request that may remain parked at the server until the server has a message to send, or until the suggested time for transmission of a reply to avoid proxy connection closure. Other embodiments allow for dynamic adjustment of the time out period that the client specifies based on the particular proxy's criteria employed by the client's system, or may be set too a discrete value.

Independent claims 1 and 20 describe various methods that are directed toward some of the above embodiments. Claim 1 is described from the client's perspective, whereas claim 20 is from the server's perspective. Claim 1 recites, *inter alia*, a method of bi-directionally communicating between a first processor on a private computer network and a second processor not on the private computer network in order to allow for the delivery of unsolicited messages to

be received from the second processor, the communication path including a public computer network and a proxy server coupled to the private computer network and separating the private compute network from the public computer network. The method comprises: transmitting a first HTTP-based "request" from the first processor to the second processor; receiving a first HTTP-based "reply" from the second processor to the first processor in response to the first HTTP-based "request"; in response to receiving the first HTTP-based "reply", transmitting a first parked HTTP-based "request" from the first processor to be parked at the second processor for establishing a persistent connection; receiving a second HTTP-based "reply" from the second processor to the first processor in response to the first parked HTTP-based "request"; and in response to receiving the second HTTP-based "reply" transmitting a second parked HTTP-based "request" via the proxy to the second processor, the second parked HTTP "request" including an acknowledgment to the second HTTP-based "reply" in order to maintain the persistent HTTP-based connection between the first processor and the second processor through the proxy server.

Applicant respectfully submits that the combination of *Susai* and *Zhu* does not render claims 1 and 20 unpatentable for at least the reason that the combination of *Susai* and *Zhu* does not disclose or suggest each and every element of these claims. For example, the combination of *Susai* and *Zhu* does not disclose or suggest that a second parked HTTP-based "request" that includes an acknowledgment to an HTTP-based "reply" in order to maintain a persistent HTTP-based connection between processors through a proxy server.

Susai discloses guaranteed content delivery incorporating putting a client on-hold based on response time. When a client makes a request to a server, this system utilizes an interface unit that puts the client on-hold when an estimated response time exceeds a threshold allowed to gain access to the requested server. During the hold process, the client may receive from a separate on-hold server various information such as music, sports, news, etc. (*see e.g.*, col. 5, l. 66 to col. 6, l. 4). When the client is ready to be taken off on-hold (e.g., the original server is ready to process the client's request), the interface unit translates the client request and passes it to the requested server. The interface unit then: receives a response from the requested server; translates the response; passes it to the requesting client; and then closes the connection with the client (*see e.g.*, col. 6, ll. 18-33).

Susai, however, does not disclose or suggest that the client sends an acknowledgement message within a request message for acknowledgement of receiving a reply message in order to

maintain a persistent connection. In fact, *Susai* immediately closes the connection after passing the reply to the requesting client. Accordingly, *Susai* cannot possibly disclose or suggest a second parked HTTP-based "request" that includes an acknowledgment to an HTTP-based "reply," in order to maintain the persistent HTTP-based connection between processors through a proxy server. Nevertheless, in response to Applicant's previous arguments, the Office Action cites Fig. 8 and col. 11, ll. 1-65 of *Susai* as allegedly disclosing various features of these claims. In particular, the Office Action states that *Susai*, Fig. 8 (and its corresponding description), illustrates a "request 818B with acknowledgement 2050 [] to the second HTTP-based 'reply' [] 818A [] and further establishing a persistent HTTP connection between [] client 700 and the requested server 701 [] through a proxy server ([], the On-Hold server 204). For at least the following reasons, Applicant respectfully disagrees with this line of reasoning for what *Susai* allegedly discloses.

The Office Action acknowledges that *Susai* "does not explicitly disclose transmitting a second HTTP-based 'request' from the first processor to be parked at the second processor for establishing a [] persistent communication channel between the first processor and the second processor through the proxy server...." Accordingly, the Office Action relies on *Zhu* for allegedly disclosing these features. As such, Applicant respectfully submits that *Susai* cannot possibly disclose or suggest a second parked HTTP-based "request" that includes an acknowledgment to an HTTP-based "reply" in order to maintain a persistent HTTP-based connection between processors through a proxy server. In fact, *Susai* at col. 11, ll. 54-65, indicates that in response to reply 818A, client 700 sends a RESP ACK 818B, wherein the interface unit 202 modifies and forwards the acknowledgment to the server 701 and then closes the connection between it 202 and the client 700. Because *Susai* does not disclose or suggest that the RESP ACK 818B is a parked HTTP-based "request", and because the interface unit of *Susai* closes the connection between it and the client (and thus between the server and the client), Applicant respectfully submits that *Susai* does not disclose or suggest a parked HTTP-based "*request*" that *includes* an *acknowledgment* to an HTTP-based "reply" in order to *maintain* a *persistent HTTP-based connection* between processors through a proxy server.

Recognizing some of the deficiencies of *Susai*, the Office Action cites *Zhu*. *Zhu* discloses emulating a persistent connection using HTTP. Similar to polling processes, *Zhu* sends empty get requests in order to receive screen updates (either from another client communication

or from a server application). Because such requests are *empty*, *Zhu* cannot possibly disclose or suggest sending a second parked HTTP-based "*request*" that *includes* an *acknowledgment* to an HTTP-based "reply" in order to maintain a persistent HTTP-based connection between processors through a proxy server. Accordingly, *Zhu* does not rectify those deficiencies noted above with regard to *Susai*. As such, Applicant respectfully submits that the combination of *Susai* and *Zhu* does not disclose or suggest each and every element of claims 1 and 20; and therefore, the combination does not render these claims unpatentable.

Independent claim 13 discloses some of the other aspects of Applicant's invention described above regarding how exemplary aspects ensure that the client's proxy server will not time out and close the connection due to inactivity on the channel. Claim 13 recites, *inter alia*, a method of enabling transmission of unsolicited messages from a server to a client by ensuring that a persistent connection between the server and the client does not time out. The method comprises: selecting a connection time out period; including the connection time out period in a parked transmitting HTTP-based "request" such that the parked HTTP-based "request" further requests a HTTP-based "reply" from the server after the expiration of the connection time out period even if there are no message to send to the client in order to avoid connection termination by the proxy server due to communication inactivity; and transmitting the parked HTTP-based "request" to the server via the proxy server to open a persistent connection therewith.

Applicant respectfully submits that the combination of *Coan* and *Zhu* does not render claim 13 unpatentable for at least the reason that the combination does not disclose or suggest each and every element of this claim.[2] For example, the combination of *Coan* and *Zhu* does not disclose or suggest selecting a connection time out period and including the connection time out period in the HTTP-based "request," which is then transmitted to the server.

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[2] Applicant respectfully notes that while not formally argued at this time, there is also improper motivation to combine these references in the manner suggested by the Office Action. For example, the Office Action attempts to modify the confirmed push mechanism from the WAP and WSPS wireless protocol of *Coan* with the HTTP protocol of *Zhu*. Further, the Office Action also states that "the artisan would have been motivated to look into the related networking art for potential methods and apparatus for implementing" various elements of Applicant's claims. Accordingly, because the cited references are directed toward two different protocols to solve different problems associated with each, neither of these references would suggest the combination. Nevertheless, even if the protocols in *Coan* could be modified with the HTTP protocol of *Zhu*, such combination would require undue experimentation. In addition, it is clear from the statements within the Office Action that focus on the differences between Applicant's claims and the motivation to look for other art that the Office Action is using impermissible hindsight reconstruction from knowledge gleaned from Applicant's disclosure. As such, any amendment or arguments made herein should not be construed as acquiescing to the Office Action's combination of these references, and Applicant reserves all rights available to broaden the claims and make these and all other reasonable arguments against such combination.

Coan discloses a wireless data service over a selected bearer service. *Coan* is directed toward problems associated with restrictions from bearer service transmissions; however, *Coan* is silent toward time out periods and HTTP-based requests. Accordingly, *Coan* cannot possibly disclose or suggest selecting a connection time out period and including the connection time out period in an HTTP-based request. Recognizing some of the deficiencies of *Coan* the Office Action cites *Zhu*.

As previously mentioned, *Zhu* discloses emulating a persistent connection using HTTP. The Office Action relies on Figs. 4-5; col. 2, ll. 25-60; col. 3, ll. 11-22; and col. 4, ll. 45-48, and claim 2, of *Zhu* as disclosing a time period which is a pre-determined amount of time configured by the HTTP server. As pointed out by the Office Action, because the time is configured by the HTTP server, *Zhu* cannot possibly disclose or suggest selecting a connection time out period and including such time out period in an HTTP-based "request", which is subsequently transmitted to the server.

Nevertheless, the Office Action reiterates this conclusion in its response to Applicant's previous arguments. In particular, the Office Action states that *Zhu* discloses a "'*time period* which is a pre-determined amount of time [which] is *configured by* the HTTP *server.*'" (Emphasis added). Assuming true the Office Action's statement of what *Zhu* allegedly discloses, *Zhu* cannot possibly rectify those deficiencies noted above with regard to *Coan*. In particular, because *Zhu* configures a reply time period *at the server*, *Zhu* cannot possibly disclose or suggest selecting a connection time out period and including such time out period in an HTTP-based "request", which is then *transmitted to* the *server*. Because the combination of *Coan* and *Zhu* does not disclose or suggest each and every element of claim 13, Applicant respectfully submits that the combination does not render this claim unpatentable.

Based on at least the foregoing reasons, Applicant respectfully submits that the cited prior art fails to make obvious Applicant's invention, as claimed for example, in independent claims 1, 13, and 20. Applicant notes for the record that the remarks above render the remaining rejections of record for the independent and dependent claims moot, and thus addressing individual rejections or assertion with respect to the teachings of the cited art is unnecessary at the present time, but may be undertaken in the future if necessary or desirable, and Applicant reserves the right to do so.

All objections and rejections having been addressed, Applicant respectfully submits that the present application is in condition for allowance, and notice to this effect is earnestly solicited. Should any question arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful in resolving any remaining issues pertaining to this application, the undersigned respectfully requests that he be contacted at +1.801.533.9800.

Dated this 22nd day of November, 2005.

Respectfully submitted,

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